

NAME OF WORK : Improvements to roads, drains
and other development works at Yelahanka old town,
Maruthinagara, sapthagiri layout Gandhinagara KHB
Colony, Nehru nagara, Shivanahalli, PDMS APTS
Premies and Surrounding areas in Ward No 01 of
Yelahanka Division under Amruth Nagarothana
Grants(PACKAGE NO 01)

PMC

Second and Final Bill

(Book No.02)

RUDRAPRASAD CONSULTANTS

Structural Engineers, Architects &
Project Management Consultants



To,

Date: 12-02-2023

ASSISTANT EXECUTIVE ENGINEER

YELAHANKA SUB DIVISION

BBMP

BANGALORE

Dear Sir,

Sub: M/s. Rudraprasad Consultants Services for the work of "IMPROVEMENTS TO ROADS, DRAINS AND OTHER DEVELOPMENT WORKS AT YELAHANKA OLD TOWN, MARUTHINAGARA, SAPTHAGIRI LAYOUT GANDHINAGARA KHB COLONY, NEHRU NAGARA, SHIVANAHALLI, PDMS APTS PREMISE AND SURROUNDING AREAS IN WARD NO 01 OF YELAHANKA DIVISION UNDER AMRUTH NAGAROTHANA GRANTS(PACKAGE NO 01)."

Ref: 1. Work Order No: BBMP/EE/YNK.D/EPMT-06/W.O/34/2022-23

2. Job code: 001-23-000001

We are here with forwarding to M/s SATHYA CONSTRUCTIONS, Prop. Rajeshwaran Satheesh, No: 600, Down Bazar Road, Yelahanka, Bangalore-560064. Second & Final Bill duly verified and certified that the work is satisfactory and for a Gross Value of Rs. 2,24,59,168.00/- (Rs. Two Crore Twenty Four Lakhs Fifty Nine Thousand One Hundred and Sixty Eight Only). First and Part bill for Rs. 7,67,45,943/- were previously submitted & the total bill amount submitted till date being Rs. 9,92,05,110.00/- (Rs. Nine Crore Ninety Two Lakhs Five Thousand One Hundred and Ten Only).

Thanking you,

Yours faithfully,

For Rudraprasad Consultants

R. KARTHIK RECHAN B.E, M.S (U.S.A)
PRINCIPAL CONSULTANT
RUDRAPRASAD CONSULTANTS



Attachments PMC Compliance report

#3, 7th Main Malleswaram, Bangalore – 560003

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NAME OF WORK:- Improvements to roads, drains and other development works at Yelahanka old town, Maruthinagara, sapthagiri layout Gandhinagara KHB Colony, Nehru nagara, Shivanahalli, PDMS APTS Premise and Surrounding areas in Ward No 01 of Yelahanka Division under Amruth Nagarothana Grants(PACKAGE NO 01)

Name of Client : EXECUTIVE ENGINEER, YELAHANKA DIVISION, BBMP, BANGALORE

Contractor/ Agency: M/s SATHYA CONSTRUCTIONS, Prop. Rajeshwaran Satheesh, No: 600, Down Bazar Road, Yelahanka, Bangalore-560064

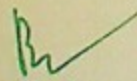
Total Cost : Rs. 2,24,59,168.00/-

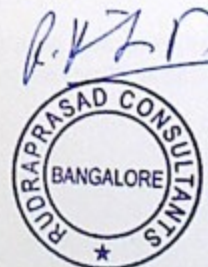
Date Of Inspection : 12-02-23

Status Of Bill : Second & Final Bill

In the Presence of : a) Assistant Engineer, Yelahanka division, BBMP, Bangalore
b) R. Karthik Rechan, Partner, M/S RUDRAPRASAD CONSULTANTS, BANGALORE

PMC COMPLIANCE REPORT		
Sl. No.	Description of work	Comments/Observations
1	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead Dismantling Brick / Tile work In cement mortar	Work done upto the Billed Quantity and the Quality is satisfactory


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2	Earth work excavation by manual means for drains, canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such similar works in all kinds of soils, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenances required to complete the work and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
3	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately) Mix 1:3:6 (M10) Using 40 mm nominal size graded crushed coarse aggregates and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
4	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Irrigation works & super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & formwork to be paid separately) M25 Design Mix Using 20 mm nominal size graded crushed coarse aggregates	Work done upto the Billed Quantity and the Quality is satisfactory

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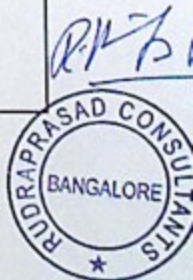
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5	Supplying, Fitting and Placing un-coated TMT bar Reinforcement in sub-structure complete as per Drawing and Technical Specifications, and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
6	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge : ** Flamed finish granite stone slab Black, Cherry Red, Brown, Cat Eye, River Pink or equivalent.	Work done upto the Billed Quantity and the Quality is satisfactory
8	Providing Size Stone masonry with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand) and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
9	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) Mix 1:2:4 (M15) Using 20 mm nominal size graded crushed coarse aggregates and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory

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10	Ruled/ Flush pointing on White sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 (One lime : 1.5 surkhi (15% dark red and 85% light yellow surkhi) : 1/2 marble dust). (The rate is inclusive of all aterials & labours involved except scaffolding). and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
11	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x200x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications.	Work done upto the Billed Quantity and the Quality is satisfactory
13	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:3 (1 cement: 3 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	Work done upto the Billed Quantity and the Quality is satisfactory
14	Providing 18 mm cement plaster in two coats under layer 12 mm thick cement plaster with cement mortar 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster with cement mortar 1:3 (1 cement : 3 coarse sand) finished rough with sponge to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
15	Providing and applying white cement based putty of average thickness 1 mm, of approve brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete as per specifications and as per directions of Engineer in charge.	Work done upto the Billed Quantity and the Quality is satisfactory

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16	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :New work (two coats) over and including water thinnable priming coat with cement primer after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	Work done upto the Billed Quantity and the Quality is satisfactory
17	Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two coat applied @ 1.67 ltr/10 m ² over and including priming coat of exterior primer applied @ 2.20 kg/10 m ²) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	Work done upto the Billed Quantity and the Quality is satisfactory
18	Providing & fixing of 2-track x 2-panel sliding windows made out of multi chambered UPVC (Matching to RAL-9016) sections and with minimum TiO ₂ (Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 50mm width x 42mm height with reinforcement of 1mm thickness and Sash with overall size of 31mm X 57mm with Gi reinforcement of 1mm for the frame and 1.5 mm for the sash. Coextruded Glazing bead for fixing of glass shall be of size 21.5mm x 9.5 mm. Windows shall be provided with 5mm plain float glass, standard hardware & single point locking system with touch lock.	Work done upto the Billed Quantity and the Quality is satisfactory
19	Providing Mathi/Nandi wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps), but including cost of materials, labour, usage charges complete as per specifications.	Work done upto the Billed Quantity and the Quality is satisfactory

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20	Providing and fixing in position fully panelled Mathi/Nandi wood shutters for doors with stiles and rails of 40mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures)	Work done upto the Billed Quantity and the Quality is satisfactory
21	Providing & fixing of louvered ventilator made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO ₂ (Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free with gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the ventilator frame. The frame having overall size of 39mm x 39mm with GI reinforcement of 1mm thickness. Louver clip in Aluminium (powder coated in white) will be used on the frame along with plastic parts for fixing the 4 mm pin head glass. Wall thickness of frame shall be 2mm. Maximum possible size - 1000mm x 1000mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	Work done upto the Billed Quantity and the Quality is satisfactory
22	Providing skirting, dadoing, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over existing rough plaster surface using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications.	Work done upto the Billed Quantity and the Quality is satisfactory
23	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ m ² including grouting the joints with white cement and matching pigments etc., complete Size of Tile 600x600 mm	Work done upto the Billed Quantity and the Quality is satisfactory

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24	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	Work done upto the Billed Quantity and the Quality is satisfactory
25	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :W.C. pan with ISI marked white solid plastic seat and lid	Work done upto the Billed Quantity and the Quality is satisfactory
26	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required: using White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	Work done upto the Billed Quantity and the Quality is satisfactory
27	Providing and fixing brass stop cock of approved quality : 20 mm nominal bore	Work done upto the Billed Quantity and the Quality is satisfactory
28	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete : 25 mm nominal bore	Work done upto the Billed Quantity and the Quality is satisfactory
29	Providing and fixing gun metal non- return valve of approved quality (screwed end) : 25 mm nominal bore Vertical	Work done upto the Billed Quantity and the Quality is satisfactory


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30	Supplying PVC ringite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe alround to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc. for: PVC pipes 25mm dia, 10 kg/sqcm & class 5	Work done upto the Billed Quantity and the Quality is satisfactory
31	Supplying PVC ringite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe alround to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc. for: PVC pipes 32mm dia., 10 kg/sqcm & class 5	Work done upto the Billed Quantity and the Quality is satisfactory

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32	Supplying UNPLASTICISED PVC pipes conforming to IS 16098:2013 with latest amendments ended with integral sockets with ISI mark and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of UPVC pipes (with cost of elastomeric sealing rings) and specials (excluding cost of specials) with jointing of approved type, with all labour, lead & lifts, including encasing the pipes allround to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (contractor will make his own arrangements for procuring water for testing) etc. for: Pipes of SN4, 110mm dia.	Work done upto the Billed Quantity and the Quality is satisfactory
33	Providing and fixing Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished seamless type tubes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	Work done upto the Billed Quantity and the Quality is satisfactory

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35	Fabricating, providing and erecting in position Hot dip galvanised Gate. Using 72*72*4.8mm Sq. GI Pipe frame with top pipe bending in heavy duty hydraulic press with sand packing and hot bending to form double arch as per drawing profile, 20mm hot dip galvanised sq. rod for verticals at 150mm c/c, as shown in the drawing including providing hot dip galvanised forged ornamental design in between sq. rods and heads at top, middle and bottom. Intermediate supports of 75*12mm and 50*6mm arch bent to hot dip galvanised flats the work is inclusive of thoroughing GI flat GI sq rods, placing, welding all the joints including grinding, finishing metal patty, painting two coats enamel painting. The rate is inclusive of all materials like GI sq. pipe, GI sq. rods, GI forged designs etc., heavy duty hinges are made out of 75mm solid sq. block assembled with 20mm dia bearing in the three places for each flop. Heavy duty locking arrangements at low places including cost of labour, painting, erecting charges using hoist pulley cranes with all lead and lift, loading, transportation, unloading, scaffolding charges and all other incidental charges for successful completion of the work as per directions of the Engineer-in-charge of the work.	Work done upto the Billed Quantity and the Quality is satisfactory
36	Demolishing cement concrete manually/ by mechanical means including disposal of material to the appropriate disposal area as per direction of Engineer-in-charge.	Work done upto the Billed Quantity and the Quality is satisfactory
38	Removing and Resetting of Footpath Slab and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory


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39	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) M20 Design Mix Using 20 mm nominal size graded crushed coarse aggregates and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
40	Providing and fixing precast reinforced cement concrete covering slabs of 10Cm thick made of M20 with OPC cement, with 20mm and down size graded granite metal coarse aggregate @0.70 mixed, Including providing and removing centering, shuttering, strutting propping etc., for edges of slabs with TMT steel (Fe500) cost of all materials, labour, all lead and lift, HOM of machinery, curing, including cost of reinforcement etc., complete and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
41	Providing B S slabs of selected quality roughly dressed havinf a size of 10 cms thick and fixed in cement mortar (1:6) including fixing curing etc., complete, and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
42	Providing one line dressing to granite stone slab / granite stone masonry as per specifications and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory

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44	Providing and fixing RCC precast cover slab of 230mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
45	Providing and fixing pre cast solid cement concrete kerb stones made out of M20 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation etc., complete and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
46	Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
54	Earth work in surface excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. In all kinds of soils upto 300 mm depth and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
55	Construction of Granular Sub-Base of required grading as per design mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 For Grading -IV Material and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory

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56	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately) Mix 1:5:10 Using 40 mm nominal size graded crushed coarse and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory
57	Providing and constructing un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including construction joints, primer, sealant, curing of concrete slabs for 14-days, and water finishing to lines and grade as per drawing and technical specification clause 1501 with all lead, lifts, loading & unloading charges, cost and conveyance of all materials, labour, equipments etc., complete. and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory

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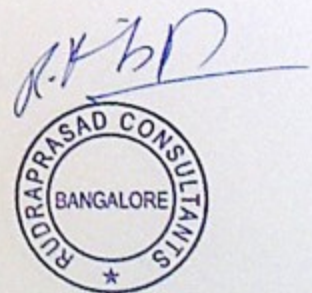


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Supply and fixing of Retro Reflective Single Arrow Road Name Signboard of size 1600mm x 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956-09 & as per IRC 67-2012 for full back ground of blue colour & white letters and fixed over 4 mm thick Aluminium Composite Material sheet having minimum 0.5 mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm x 20mm x 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 nos of vertical posts of 50 mm OD stainless steel pipe of 202 grade firmly fixed to the ground by means properly designed foundation 1 of size 450mm x 450mm x 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in color with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete. as per direction of engineer in charge of work clause 6.9 of IRC 67-2012 for Type XI retro reflective sheeting from the sheeting manufacturer & a certified copy of test reports from an Independent test laboratory conforming to clause 6.7 of IRC 67 2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification in the tender with all lead and lift and completion of the work as per directions of the Engineer in charge of the work.

Work done upto the Billed Quantity
and the Quality is satisfactory

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65	Supplying and Fixing of Molded Shank Raised Pavement Markers / Cat's Eye made of polycarbonate and ABS moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to ASTM D 4280 Type H and complying to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97 DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 +/- 2 mm and with minimum reflective area of 13 cm ² on each side and the slope to the base shall be 35 +/- 5 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 +/- 2 mm and height not less than 30 +/- 2 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer. The contractor shall submit a two year warranty for satisfactory field performance including stipulated retro-reflectance of the reflecting panel, to the Engineer.	Work done upto the Billed Quantity and the Quality is satisfactory
66	Lead for Disposal of Debris and as per the directions of the Engineer-in-charge of the work	Work done upto the Billed Quantity and the Quality is satisfactory

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